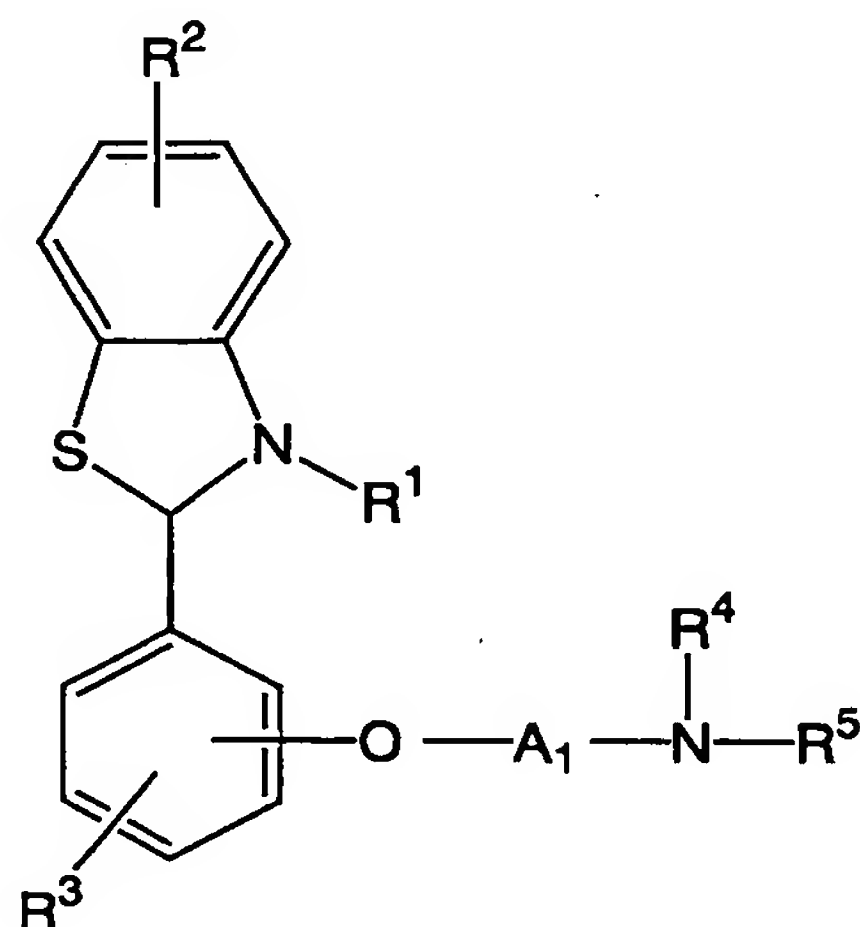


## CLAIMS

1. An inhibitor of pain threshold decrease comprising a  $\kappa$ -opioid receptor agonist as an active ingredient.

2. The inhibitor of pain threshold decrease as claimed in claim 1, characterized in that it is applied to treatment of chronic pain.

3. The inhibitor of pain threshold decrease as claimed in claims 1 or 2, wherein the  $\kappa$ -opioid receptor agonist is a compound represented by the following general formula or a salt thereof.



wherein  $R^1$  represents an acyl group;

$R^2$  and  $R^3$ , which are the same or different, represent a hydrogen atom, a halogen atom, an alkyl group, a cycloalkyl group, an aryl group, a hydroxyl group or its

ester, an alkoxy group, an aryloxy group, a carboxy group or its ester, an alkylcarbonyl group, an arylcarbonyl group, an amino group, an alkylamino group, an arylamino group, a cyano group or a nitro group, the alkyl group, the cycloalkyl group, the aryl group, the alkoxy group, the aryloxy group, the alkylcarbonyl group, the arylcarbonyl group, the alkylamino group or the arylamino group can be substituted with a halogen atom, an alkyl group, a cycloalkyl group, an aryl group, a hydroxyl group or its ester, an alkoxy group, an aryloxy group, a carboxy group or its ester, an alkylcarbonyl group, an arylcarbonyl group, an amino group, an alkylamino group, an arylamino group, a cyano group or a nitro group;

$R^4$  and  $R^5$ , which are the same or different, represent a hydrogen atom, an alkyl group, a cycloalkyl group, an aryl group, a hydroxyl group or its ester, an alkoxy group, an aryloxy group or an acyl group, the alkyl group, the cycloalkyl group, the aryl group, the alkoxy group, the aryloxy group or the acyl group can be substituted with a halogen atom, an alkyl group, a cycloalkyl group, an aryl group, a hydroxyl group or its ester, an alkoxy group, an aryloxy group, a carboxy group or its ester, an alkylcarbonyl group, an arylcarbonyl group, an amino group, an alkylamino group, an arylamino group, a mercapto group, an alkylthio group, an arylthio group, a cyano group, a

nitro group or a heterocycle, and further the alkyl group, the cycloalkyl group, the aryl group, the alkoxy group, the aryloxy group, the alkylcarbonyl group, the arylcarbonyl group, the alkylamino group, the arylamino group, the alkylthio group, the arylthio group or the heterocycle can be substituted with an aryl group, a hydroxyl group or its ester, an alkoxy group, an aryloxy group, an alkoxyalkoxy group, a carboxy group or its ester;

$R^4$  and  $R^5$  can be bound to form a heterocycle, the heterocycle can be substituted with a halogen atom, an alkyl group, a cycloalkyl group, an aryl group, a hydroxyl group or its ester, an alkoxy group, an aryloxy group, a carboxy group or its ester, and further the alkyl group, the cycloalkyl group, the aryl group, the alkoxy group or the aryloxy group can be substituted with an aryl group, a hydroxyl group or its ester, an alkoxy group, an aryloxy group, an alkoxyalkoxy group, a carboxy group or its ester; and

$A_1$  represents an alkylene group.

4. The inhibitor of pain threshold decrease as claimed in claim 3, wherein the  $\kappa$ -opioid receptor agonist is

(+)-3-acetyl-6-chloro-2-[2-(3-(N-(2-hydroxyethyl)-N-isopropylamino)propoxy)-5-methoxyphenyl]benzothiazoline,

(+)-3-acetyl-6-chloro-2-[2-(3-(N-(2-methoxyethyl)-N-isopropylamino)propoxy)-5-methoxyphenyl]benzothiazoline,  
 (+)-3-acetyl-6-chloro-2-[2-(3-(N-(2-ethoxyethyl)-N-isopropylamino)propoxy)-5-methoxyphenyl]benzothiazoline,  
 (+)-3-acetyl-6-chloro-2-[2-(3-chloropropoxy)-5-methoxyphenyl]benzothiazoline, 3-acetyl-6-chloro-2-[2-(3-(N-(2-hydroxyethyl)-N-isopropylamino)-1-methylpropoxy)-5-methoxyphenyl]benzothiazoline,  
 (+)-2-[2-(3-(N-(2-acetoxyethyl)-N-isopropylamino)propoxy)-5-methoxyphenyl]-3-acetyl-6-chlorobenzothiazoline,  
 (+)-3-acetyl-6-chloro-2-[2-(3-(N-isopropyl-(N-methoxymethyloxyethyl)amino)propoxy)-5-methoxyphenyl]benzothiazoline,  
 3-acetyl-6-chloro-2-[2-(3-(N-(2-ethoxyethyl)-N-isopropylamino)propoxy)-5-methoxyphenyl]benzothiazolinediacetyl  
 or a salt thereof.

5. The inhibitor of pain threshold decrease as claimed in claims 1 or 2, wherein the  $\kappa$ -opioid receptor agonist is an arylacetic acid (N-alkyl-N-(N',N'-dialkyl)aminoalkyl)amide derivative.

6. The inhibitor of pain threshold decrease as claimed in claim 5, wherein the arylacetic acid (N-alkyl-N-(N',N'-dialkyl)aminoalkyl)amide derivative is trans-2-(3,4-dichlorophenyl)-N-methyl-N-[2-(1-

pyrrolidinyl)cyclohexyl]acetamide,

2,2-diphenyl-N-[2-(3-(S)-hydroxy-1-pyrrolidinyl)-1-(S)-phenylethyl]methylacetamide,

2-(3,4-dichlorophenyl)-N-methyl-N-[(5R\*,7S\*,8S\*)-7-(1-pyrrolidinyl)-1-oxaspiro[4,5]deca-8-yl]acetamide

or a salt thereof.

7. The inhibitor of pain threshold decrease as claimed in anyone of claims 1 to 6, characterized in that the  $\kappa$ -opioid receptor agonist is continuously administered.

8. A method for treating chronic pain comprising administering the inhibitor of pain threshold decrease as claimed in anyone of claims 1 to 7 to a patient at a therapeutically effective dose.

9. Use of a  $\kappa$ -opioid receptor agonist for production of an inhibitor of pain threshold decrease.